

Claims:

10/15/75

1. An ethylene polymer having:

(A) a density of from 0.930 to 0.970 g/cm³,

(B) a ratio (Mw/Mn) of a weight average molecular weight
5 (Mw) to a number average molecular weight (Mn), as measured by
GPC, of from 1.2 to 10, and

(C) a ratio (MFR₁₀/MFR₂) of a melt flow rate (MFR₁₀) at
190°C under a load of 10 Kg to a melt flow rate (MFR₂) at 190°C
under a load of 2.16 Kg of from 16.2 to 50.

2. An ethylene polymer having:

(A) a density of 0.921 g/cm³ or more but less than 0.930
g/cm³,

(B) a ratio (Mw/Mn) of a weight average molecular weight
15 (Mw) to a number average molecular weight (Mn), as measured by
GPC, of from 1.2 to 4.0, and

(C) a ratio (MFR₁₀/MFR₂) of a melt flow rate (MFR₁₀) at
190°C under a load of 10 Kg to a melt flow rate (MFR₂) at 190°C
under a load of 2.16 Kg of from 12 to 50.

3. An ethylene polymer having:

(A) a density of from 0.850 to 0.970 g/cm³,

(B) a ratio (Mw/Mn) of a weight average molecular weight

209020-665900T

(Mw) to a number average molecular weight (Mn), as measured by GPC, of from 1.2 to 10, and

(D) a relation of $\omega_2 / \omega_1 \geq 18$ where ω_1 and ω_2 denote angular velocity (rad/sec) when complex elastic modulus G^*

5 (dyne/cm²) at 200°C is 5.0×10^5 dyne/cm² and 2.0×10^6 dyne/cm², respectively, which are determined by measurement of the angular velocity dependence of the complex elastic modulus of the copolymer.

10 4. A process for preparing an ethylene polymer, which process comprises preparing said ethylene polymer in the presence of an olefin polymerization catalyst comprising an organic hafnium compound having at least one substituted cyclopentadienyl group and an organic boron compound

15 essentially, wherein the ethylene polymer has:

(A) a density of from 0.850 to 0.970 g/cm³,

(B) a ratio (Mw/Mn) of a weight average molecular weight (Mw) to a number average molecular weight (Mn), as measured by GPC, of from 1.2 to 10, and

20 (C) a ratio (MFR₁₀/MFR₂) of a melt flow rate (MFR₁₀) at 190°C under a load of 10 Kg to a melt flow rate (MFR₂) at 190°C under a load of 2.16 Kg of from 12 to 50.

10066599.020602

5. A process for preparing an ethylene polymer, which process comprises preparing said ethylene polymer in the presence of an olefin polymersization catalyst comprising an organic hafnium compound having at least one substituted cyclopentadienyl group and an organic boron compound essentially, wherein the ethylene polymer has:

(A) a density of from 0.850 to 0.970 g/cm³,

(B) a ratio (Mw/Mn) of a weight average molecular weight (Mw) to a number average molecular weight (Mn), as measured by GPC, of from 1.2 to 10, and

(D) a relation of $\omega_2 / \omega_1 \geq 13$ where ω_1 and ω_2 denote angular velocity (rad/sec) when complex elastic modulus G^* (dyne/cm²) at 200°C is 5.0×10^5 dyne/cm² and 2.0×10^6 dyne/cm², respectively, which are determined by measurement of the angular velocity dependence of the complex elastic modulus of the copolymer.

6. A molded article selected from the group consisting of (a) injection molded articles, (b) hollow or extrusion molded articles, (c) rotational molded articles, (d) film or sheet molded articles and (e) extrusion coating molded articles, which article comprises, as an essential component, an ethylene polymer as claimed in any one of claims 1 to 3 or

10066599.020602

an ethylene polymer prepared by a preparation process as
claimed in claim 4 or 5.

Add A1

10066599 020602